

Working together to measure the health of Puget Sound streams

Enhancement and Standardization of Benthic Macroinvertebrate Monitoring and Analysis Tools for the Puget Sound Region



Grant details

Award amount:
\$699,877

Timeline:
January 2011 –
December 2013

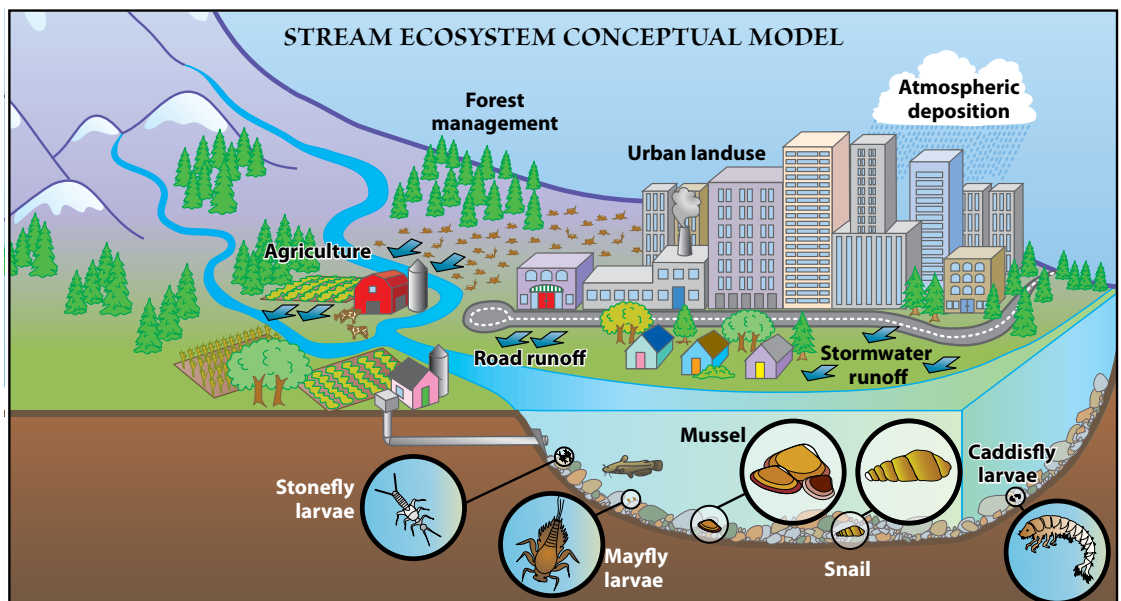
Sample collection:
summer 2011 & 2012

Puget Sound stream invertebrates

Hundreds of unique species of benthic macroinvertebrates live among the rocks and cobbles of Puget Sound streams. Dozens of local jurisdictions, tribes and state and federal agencies collect macroinvertebrates to measure stream health and assess the impact of human disturbance. Macroinvertebrates are good indicators of a stream's biotic integrity because sensitive species decline as sedimentation, contaminant levels, and temperatures increase and as natural vegetation, habitat, and patterns and types of flow are altered.

Grant objectives

- In 2010 King County received a grant from EPA to begin to develop standardized benthic macroinvertebrate monitoring methods and enhance monitoring tools, regional collaboration, and partnerships throughout the Puget Sound area.
- Over time, different collection and analysis protocols have evolved within regional agencies to evaluate macroinvertebrate community data.
- This project matches two key goals of the Puget Sound Partnership to develop standardized monitoring tools and an ecosystem indicator for stream invertebrates.



Alternative Formats Available
206-684-1235/711 (TTY Relay)

Project outcomes

Standardization begins with collaboration. This project brings together regional partners and experts to define standards for macroinvertebrate stream assessment. Outcomes include:

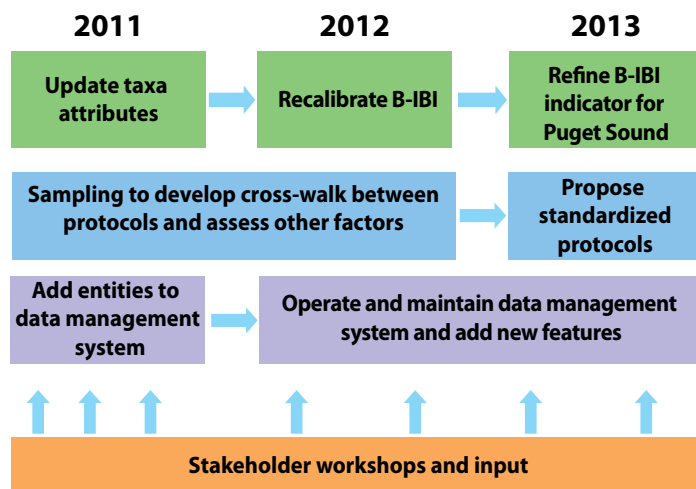
- An updated list of sensitive and tolerant taxa specific to the Puget Sound lowlands;
- Recalibration of a regional multimetric index, the Benthic Index of Biotic Integrity;
- A numeric cross-walk to reconcile index scores derived from different field collection protocols that allows agencies to switch to a standard without orphaning previous data;
- Application of EPA's Biological Condition Gradient framework to define thresholds of impairment; and
- Expansion of the existing Puget Sound Stream Benthos database, which includes data for >3,000 macroinvertebrate samples:
<http://www.pugetsoundstreambenthos.org/>

Regional connections

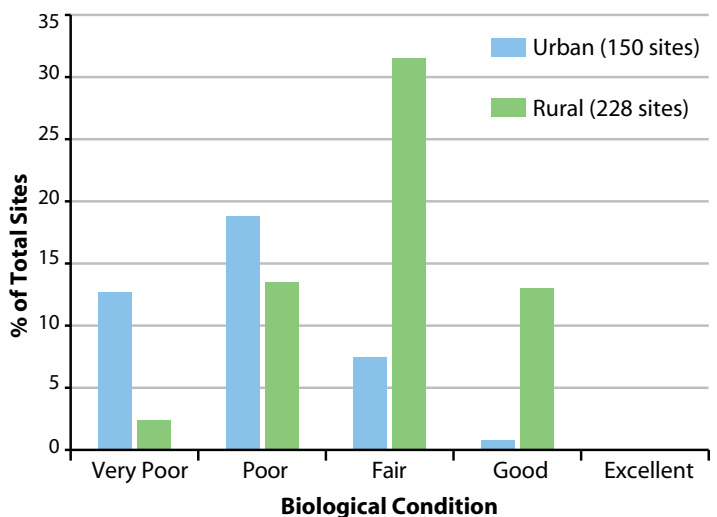
This project supports collaboration and assessment at the regional level by:

- Hosting regional workshops to share how people are using biological data;
- Providing training for field collection and database entry of invertebrate data;
- Connecting people and programs at the local, state, tribal and federal levels; and
- Developing a stream condition indicator to support status and trends and NPDES stormwater permit monitoring as recommended by the Puget Sound Stormwater Workgroup to the Washington Department of Ecology.

Project timeline



2010 Puget Sound B-IBI scores



Current collaboration

We have engaged with over 100 individuals from almost 50 organizations including:

- 17 cities
- 12 tribes
- 6 counties
- 3 state or regional entities
- 4 not-for-profit organizations
- 5 federal agencies

For more information contact:

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